

# **NIEHS Worker Education and Training Program Fall Technical Workshop**

## **“Disaster Response Training: From World Trade Center to Katrina – Five Years of Lessons Learned”**

September 14, 2006



**TETRA TECH, INC.**

### **Timothy Fields, Jr.**

Senior Vice President, Technical Environmental Services  
Group

Tetra Tech, Inc.

1881 Campus Commons Drive, Suite 200

Reston, VA 20191

Phone: 703-390-0648

Fax: 703-391-5876

E-Mail: [tim.fields@ttemi.com](mailto:tim.fields@ttemi.com)

# Outline of Presentation

- Major Disasters Tetra Tech Responded to Over the Past 5 Years
- Overview of Tetra Tech Emergency Response Training Programs (EPA – OSCs; START; ERT; FEMA; NIEHS)
- Training Tetra Tech Administers to Its Staff
- Changes in Health and Safety, and Training Practices Resulting from Major Disasters
- Lessons Learned from Major Disasters

# Introduction

- From 2001 to 2006, terrorist disasters and natural disasters have created many demands on the nation's emergency responders
- These disasters have increased the priority of high quality health and safety training for these responders
- Lessons have been learned which will allow improvements in the protection of responders in future national disasters
- Major disasters have required Tetra Tech to modify our health and safety practices and training to be more specific to the particular hazards of these disasters

# Overview of Tetra Tech, Inc.

- Founded in 1966
- Full-service engineering and management consulting firm
- 7,500 employees
- More than 300 offices worldwide
- \$1.4 billion in annual revenue

# Overview of EPA On-Scene Coordinator (OSC) Training Program

- 40-hour HAZWOPER
- Permit-Required Confined Space Entry
- CPR and First Aid
- Dangerous Goods Shipping
- 8-hour HAZWOPER Supervisor
- Basic Radiation Safety
- Level A Personal Protective Equipment
- Mark I Antidote Kit
- Counter-Terrorism Emergency Response
- Field Screening Techniques/Hazard Categorization
- Methamphetamine Laboratory Emergency Response
- Air Monitoring for Emergency Response
- BioWatch Training

# **Superfund Technical Assessment and Response Team (START) Program**

- EPA requested Tetra Tech to prepare “Chemical Agents Sampling Guidelines and Analytical Approach for Regional Counter-Terrorism Response Plans” (1/31/03)
- Tetra Tech also prepared a Biological Sampling Procedures Booklet for Regional Counter-Terrorism Response Plans (4/22/03)
- START Health and Safety Supplement to Address Threats Posed by Anthrax, Ricin, and Radiation Hazards (5/19/05)
- Conduct training and table-top/full-scale exercises for all levels of the response community

# **Overview of U.S. EPA Environmental Response Team (ERT) Training Program**

- Provide comprehensive Health & Safety and Environmental training to federal, state and local environmental professionals
- Provide focused training to EPA responders on the Incident Command System, Level A Readiness and specialized response instrumentation

# ERT Health & Safety Courses

- Hazardous Materials Incident Response Operations (HMIRO)
  - OSHA 40 hr. course 29CFR1910.120(e)(3)
- Health & Safety Eight-Hour Training (H&SEHT)
  - Refresher course 29CFR1910.120(e)(8)
- Safety and Health Decision Making for Managers (SHDMFM)
  - Supervisor's course 29CFR1910.120(e)(4)



# ERT Homeland Security Courses

- Emergency Response to Hazardous Material Incidents (ERTHMI)
  - ER Technicians course 29CFR1910.120(q)(6)
- Advanced Radiation Safety
- Incident Command System
- Exercises and Simulations

# **ERT Training Program Statistics 2001 - 2005**

- Total classes – 1208
- Total students – 26,712
  - EPA – 11,253 (42%)
  - Other Federal – 2,966 (11%)
  - Tribal – 426 (2%)
  - State – 6,973 (26%)
  - Local – 3,578 (13%)
  - Private – 1,291 (5%)
  - International – 225 (1%)

# FEMA Training Program

- Tetra Tech provides training instruction to
  - 10 courses annually at the FEMA training facility in Emmitsburg, MD. Have taught more than 400 students over the past two years.
- Training provided includes courses in Basic Hazard Mitigation, Advanced Flood, GIS, and Risk Assessment, and Advanced Hurricane
- Recently, there has been more focus on levees, and how to evaluate risks associated with these structures. Also, there has been increased discussion of the cost and deadly impact of major hurricanes.

# Tetra Tech Involvement in Exercises and Simulations

- Large Scale Simulations – Operation River City in Louisville, KY (Nov. 2003)
- Regional Response Readiness exercises
  - Weapons of Mass Destruction
  - Infrastructure Failure
  - Natural Disasters
  - Emergency Operations Center
- Support to EPA on TOPOFF 2, and TOPOFF 3
- Contractor on U.S. DHS's National Exercise Program
- Support to EPA on Ruby Slippers Exercise
- Long-term support to EPA Environmental Response Team (ERT) Exercise Efforts
- In addition to training and exercise drills, high priority is also given to medical surveillance issues. During the Hurricane Katrina response, Tetra Tech provided vaccinations to our employees which exceeded NIOSH/CDC/EPA recommendations.

# Tetra Tech Role in Major Disasters

- Has Primarily Been as EPA's Largest Emergency Response Contractor – Prime Contractor in 4 EPA Regions, and Sub-Contractor in 4 Other EPA Regions
- Conduct Training Programs for Several Federal Agencies – EPA, NIEHS, FEMA
- Conduct Emergency Preparedness Exercises for A Number of Clients
- Major Disasters Tetra Tech Has Responded to in Past 5 Years Are As Follows:
  - World Trade Center
  - Pentagon
  - Anthrax
  - Columbia Shuttle
  - Katrina





# **World Trade Center/Pentagon Disasters (2001)**

- Provided emergency response services at WTC and Pentagon following the 9/11/2001 terrorist attacks
- Conducted air monitoring support at the WTC in support of EPA Region 2 for several months; sampled for asbestos, silica, and metals
- Conducted stationary and real-time air monitoring at the Pentagon in support of EPA Region 3. Sampled for silica, asbestos, and VOC's over a 4 week period.





# Capitol Hill Anthrax Response (10/2001)

- Tetra Tech conducted multi-media biological sampling activities, provided oversight of hot zone activities, and helped design and implement post-fumigation validation sampling.
- Up to 60 personal on-site 7 days/week, 24 hours/day
- On 10/31/01, just 15 days after the initial anthrax response, Tetra Tech developed and distributed “Health and Safety Requirements for Assessment, Cleanup, and Decontamination Activities in Environments Known or Suspected to be contaminated with Anthrax.”







# 2003 Columbia Shuttle Disaster

- Task—overall management of debris recovered in Texas and Louisiana
- Comprehensive health and safety training program was offered as new responders arrived
- Different agencies had different safety concerns and protocols for the same operations
- Prior to conducting field operations, a Federal Health and Safety Plan was developed and responders briefed
- Additional field audits of health and safety procedures should have been performed
- Excessive hours worked by responders was a safety concern (e.g., increasing risks of injury and sub-optimum performance)
- Higher priority needs to be placed on identifying back-up and relief personnel
- Responders needed better training on the operation of the Incident Command System











# **Hurricanes Katrina/Rita (2005)**

- Tetra Tech provided responders in support of EPA Regions 4 and 6
- In Region 6 (Louisiana), responders were involved early on in search and rescue operations
- Responders were provided with a Pre-Deployment and Deployment Safety Briefing
- Tetra Tech prepared a “Health and Safety Manual on Requirements for Emergency Response Personnel Working in Hurricane-Affected Areas” (9/05)
- Also required responder training in the specific anticipated hazards of the response before field work began



# Katrina/Rita Disaster Responses

- Developed An Intensive Site-Specific Health and Safety Plan and Training Program
- Provided Immunizations Above and Beyond What Was Required By Federal Agencies
- Made Clear that Responders Understood that Search and Rescue, and Encountering of Human Remains Were Part of the Task
- A Safe Work Practice Guide was developed for Responders Deployed to Hurricane-Affected Areas
- A Briefing from WorkCare (Tetra Tech Medical Provider) about Stress in these types of situations was provided to responders
- Constantly changing information on various Web sites (EPA, NIOSH, CDC, et al.) about chemical contaminants, diseases in the area, etc., was shared daily with responders

# Hurricanes Katrina and Vulnerable Populations

- Need for better telecommunications equipment and delivery mechanisms to meet the needs of responders and the public
- Federal agencies need to work to provide programs which train and create jobs for low income, minority, and undocumented workers. Need proper training, clothing, and equipment to address contaminants (e.g., mold, lead, and asbestos) they are exposed to in assessment and remediation activities.

# **NIEHS/OAI/Tetra Tech Training in New Orleans, LA**

- Training Program is funded by a contract with OAI, Inc., under a grant from NIEHS
- Since April 2006, Tetra Tech has trained about 380 students (FEMA, USACE, Contractors, etc.) in a variety of courses
- The contract support is for training in response, recovery, and remediation activities associated with Hurricanes Katrina and Rita
- Courses taught were as follows:
  - 40-hour HAZWOPER (including 8-hour refreshers),
  - Confined Space Entry,
  - OSHA 10-hour Basic Construction Safety,
  - Asbestos (worker/supervisor),
  - Lead (worker/supervisor),
  - Mold remediation/awareness,
  - Hurricane General Health and Safety and Hazard Communication,
  - NIMS-ICS

## **Challenges Associated with New Orleans, LA, Training**

- Deployment in the field of essential equipment for training exercises often arise because of isolated course location. Doing so requires long hours to ensure that new equipment is ready and in place.
- The majority of the students completing this training are taking this training after a full 8 to 12 hour shift (including weekends). Tetra Tech personnel adapt to the hardships put on the students by offering night and weekend courses.

# **Tetra Tech Program Changes Since 9/11**

- Creation and presentation of an anthrax course in response to Capital Hill anthrax contamination
- Creation and presentation of 14 Incident Command System (ICS) courses
- Increase in the number and complexity of exercises throughout the EPA regions

# **Tetra Tech Program Changes Since 9/11 (continued)**

- Integration of ICS into all appropriate courses and exercises
- Creation of a Decontamination course in conjunction with EPA National Decon Team
- Response Readiness Exercise course
  - Biological, Radiological, Chemical and Explosive lab scenarios
  - Level A exercises for EPA OSCs, state and local partners

# **Tetra Tech Program Changes Since 9/11 (continued)**

- Partnership with the U.S. Navy on an environmental sampling course for overseas predeployment
- Development of two new response courses for advanced radiation training and air monitoring for emergency response

# Health and Safety Program Changes Resulting From Recent Disasters

- Disasters have drastically altered the Tetra Tech health and safety program
- Protocols have been instituted which did not exist years ago, e.g.,
  - Anthrax protocols
  - Ricin protocols
  - BioWatch protocols
  - Chemical/biological/radiological standard HASP formats
  - Safe Work Practices for Hurricane Response
  - Added a Pathogens Module and A Hurricane Response Module to the 8-Hour HAZWOPER Refresher Training



# Lessons Learned For Future Disasters

- There was a variation among EPA Regions 4 and 6 in the degree of emphasis placed on health and safety in response to Hurricane Katrina. For example, EPA Region 4 did not provide for a Health and Safety Officer to support Tetra Tech responders. EPA Region 6 provided for several Health and Safety Officers to support emergency responders.

# **Lessons Learned For Future Disasters (continued)**

- Future disasters will sometimes create challenges regarding the provision of shelter, sanitation, and shelter, which result in security and safety issues for responders
- Need to provide training on how responders can support search and rescue efforts, and deal with human remains
- Responders are a special group of people – they will find a way to get the job done!